PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Kouta Fukui

Docket No: FS-F03223-01

Appln. No.: 10/756,407

Group Art Unit: 1752

Confirmation No.: 2618

Examiner: Thorl Chea

Filed: January 14, 2004

For: PHOTOTHERMOGRAPHIC MATERIAL

DECLARATION UNDER 37 C.F.R. § 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Kouta Fukui, a citizen of Japan, hereby declare and state:

THAT I graduated from Tokyo Institute of Technology, Department of Electronic Chemistry, with a Master's degree in Science and Engineering in March 1990;

THAT I joined Fuji Photo Film Co., Ltd. (now FUJIFILM Corporation) in April 1990, and since that time, I have been engaged in research and development in the field of silver halide photosensitive material;

THAT I am the inventor of the subject matter disclosed and claimed in the above-identified patent application; and

THAT I am familiar with the Office Action dated November 28, 2006, and understand the Examiner's rejections therein.

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The following additional comparative experiment was carried out by me or under my supervision.

EXPERIMENT

On page 5 of the Office Action, in paragraph 4, lines 15-, the Examiner argues as recited as follows.

> The argument with respect to the unexpected results is not persuasive since results are not related to the closest prior art of record, especially EP '066 that require [*sic*] the silver saving agent in the photothermographic material. The comparative samples presented in the Declaration on June 14, 2005 does [*sic*] not contain silver saving agent required by EP '066. Therefore, it cannot be concluded that the claimed material is better than that disclosed in EP '066.

In response to the Examiner's contention, the comparative experiment submitted on June 14, 2005 is hereby modified to replace a silver saving agent with those disclosed in EP 1 168 066 A2 (EP '066).

Specifically, photothermographic material sample Nos. 3a to 3d, 114a to 114d, 116a to 116d and 118a to 118d are prepared in the same manner and have the same structure (composition) as photothermographic material Nos. 3, 114, 116 and 118 of the experiment 1 of the 37 C.F.R. § 1.132 declaration dated June 14, 2005 except that silver saving agents, H-94, H-64, H-37 and H-21, are used in the same mol amount in place of the silver saving agent 5-1-5. The silver saving agents, H-94, H-64, H-37 and H-21, are disclosed in EP '066. The following Table A shows the silver halide emulsion, the silver iodide content and the kind of silver saving agent that are used in each of the photothermographic material samples. These photothermographic material samples are exposed, thermally developed and evaluated in the same manner as recited in Example 1 of the present specification. The obtained results are shown in the following Table B.

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Table A

Photo-thermo-graphic material No.	Silver halide emulsion	Silver iodide content	Silver saving agent	Remarks
1	A	100	-	Comparative
3a	A	100	H-94	Invention
3b	A	100	H-64	Invention
3c	A	100	H-37	Invention
3d	A	100	H-21	Invention
113	J	40	-	Comparative
114a	J	40	H-94	Invention
114b	J	40	H-64	Invention
114c	J	40	H-37	Invention
114d	J	40	H-21	Invention
115	K	35	-	Comparative
116a	K	35	H-94	Comparative
116b	K	35	H-64	Comparative
116c	K	35	H-37	Comparative
116d	K	35	H-21	Comparative
117	L	10	-	Comparative
118a	L	10	H-94	Comparative
118b	L	10	H-64	Comparative
118c	L	10	H-37	Comparative
118d	L	10	H-21	Comparative

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Table B

Photo-thermo-graphic material No.	Photographic properties			Film physical property	Unprocessed stock storability	Image storability	Remarks
	Dmax	Gradation	Tone	(Brittleness)	(ΔDmin)	(print-out)	
1	2.7	1.4	△×	○	0.00	0.00	Comparative
3a	4.0	2.6	○	○	0.00	0.00	Invention
3b	4.0	2.7	○	○	0.00	0.00	Invention
3c	4.0	2.6	○	○	0.00	0.00	Invention
3d	4.0	2.7	○	○	0.00	0.00	Invention
113	2.7	1.4	△×	○	0.00	0.00	Comparative
114a	4.0	2.6	○	○	0.00	0.00	Invention
114b	4.0	2.7	○	○	0.00	0.00	Invention
114c	4.0	2.6	○	○	0.00	0.00	Invention
114d	4.0	2.6	○	○	0.00	0.00	Invention
115	2.7	1.4	△	○	0.01	0.06	Comparative
116a	4.0	2.7	○	○	0.04	0.17	Comparative
116b	4.0	2.7	○	○	0.03	0.15	Comparative
116c	4.0	2.6	○	○	0.03	0.14	Comparative
116d	4.0	2.6	○	○	0.05	0.18	Comparative
117	2.7	1.5	△	○	0.01	0.08	Comparative
118a	4.0	2.7	○	○	0.05	0.20	Comparative
118b	4.0	2.7	○	○	0.05	0.19	Comparative
118c	4.0	2.7	○	○	0.04	0.17	Comparative
118d	4.0	2.7	○	○	0.07	0.23	Comparative

As shown in Table B, with the sample Nos. 3a to 3d and 114a to 114d which use a silver saving agent disclosed in EP '066 namely H-94, H-64, H-37 and H-21, color tone and film physical property (brittleness) are improved while unprocessed stock storability and image storability (improvement in print-out performance) exhibit good results compared to sample Nos. 1 and 113 which do not use a silver saving agent. On the other hand, with sample Nos. 116a to 116d and 118a to 118d which use silver halide emulsion K and L, unprocessed stock storability and image storability (improvement in print-out performance) remarkably deteriorate while color tone and film physical property (brittleness) are improved over sample Nos. 115 and 117.

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It is totally unexpected for one skilled in the art at the time the invention was made that photothermographic material that employs a silver halide emulsion having a high silver iodide content of 40 mol% or more achieves significantly improved effects by adding a silver saving agent without deteriorating unprocessed stock storability and image storability (improvement in print-out performance).

For the Examiner's reference, the effect mentioned in Siga et al and the comparison with the present invention is detailed as below.

While Siga discloses the use of silver iodobromide containing high silver iodide, Siga merely teaches high sensitivity and improved raw storability. Siga does not mention the improvement in image stability (improvement in print-out performance). The improvement in raw material storability, which is disclosed in Siga, relates to suppressing Dmin (fogging) while an unexposed/undeveloped image-forming material is stored in a dark place. On the other hand, the improvement in image stability (print-out performance) relates to phenomena in that the photosensitive silver halide remaining in the image-forming layer even after exposure and thermal development turns into silver (blackened) while the photosensitive material is stored in a bright place after thermal development, deteriorating image stability as a result of fogging.

Accordingly, the mechanism is completely different between fogging of the unexposed/undeveloped image-forming material during being stored in a dark place and fogging of the already thermally developed material during being stored in a bright place after exposure and thermal development. Therefore, one skilled in the art would find it hard to expect the method for suppressing the latter based on the knowledge about the method for suppressing the former.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the

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United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: March 26, 2007

Kouta Fukui

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